Committee: Economic and Social Council

Issue: The Utilization of Genetically Modified Foods in the Fight Against Hunger

Student Officer: Georgios Dougalis

Position: President

PERSONAL INTRODUCTION

Dear Delegates,

My name is Georgios Dougalis and I will be serving as President of the Economic and Social Council in the 2nd ACGMUN. I am currently studying at ACS Athens, and I am pursuing the IB Diploma. I started MUN all the way back in 2014 and the upcoming conference will be my 14th experience.

Having taken up many of the roles available to someone pursuing MUN, from a delegate to an ambassador, and from ICJ Judge and ICJ Advocate to Student Officer, I have gradually seen the Economic and Social Council as a personal favorite of mine. By the time of ACGMUN I will have chaired this committee 3 times, having presided over it twice.

My goal for the conference is to ensure that every delegate leaves more informed about the issues than when they came. Besides knowledge about the issues themselves, we hope that through our guidance and example, as well as the hands-on experience you will get, you will leave a little more skilled in rhetoric, negotiation, and legislative thinking, as well as more comfortable with such notions.

My co-chairs and I have worked very hard to make your research easier (the study guide at hand is a part of this effort) and we would be deeply satisfied if we were to see our committee work blossom, making the experience as worthwhile and enriching as possible for every one of us.

With this purpose in mind, I ask that you do not hesitate to contact me, if any issues arise. I am a committed believer in the idea that, for a successful conference, nine-tenths of the work ought to be done prior to the 3 days during which it takes place. In this spirit, I put myself at your disposal, and pronounce my willingness to come in contact with you prior to the conference (preferably via the email address giorgos.dougalis@gmail.com), so that I can help you prepare in any way possible.

Looking forward to working with you!
Georgios Dougalis

TOPIC INTRODUCTION

#1 Chemical modification of vegetables

The United Nations Food and Agriculture Organization estimates that about 815 million people, or roughly one in nine, suffered from chronic undernourishment in the years 2014-2016. This is just a fraction of those who fall under the umbrella of people struggling with hunger (as we will further explain in our definitions). In addition to that, today's world of 7.6 billion people will experience an estimated population increase of an additional 2.5 billion by the year 2050 (Washington Post), which translates into an additional 2.5 billion mouths to feed.

Given that the world is already facing a food crisis, different strategies ought to be considered for the resolution of this conflict, the focus of which should be both immediate and long term. The goal should be to ensure that no one will have to go hungry in the present, as well as developing a sustainable framework within which population growth can be supported in the future.

Tackling food quality and food abundance are two very integral parts of addressing this issue. It was as part of the ongoing efforts to guarantee both of the former that Genetically Modified Foods were introduced. To continue our discussion of this issue, we should proceed with the establishment of some crucial facts and figures, and then the definitions of key terms and concepts.

Crucial Facts and Figures[1]

Hunger and food security

- Overall number of hungry people in the world: 815 million, including:
  - In Asia: 520 million
  - In Africa: 243 million
  - In Latin America and the Caribbean: 42 million
- Share of the global population that is hungry: 11%
  - Share of Asia's population that is hungry: 11.7%

[1] All figures in the section provided by the FAO

- Of Africa's: 20% (in eastern Africa, 33.9%)
- In Latin America and the Caribbean: 6.6%

– *Malnutrition in all its forms*

– Number of children under 5 years of age who suffer from stunted growth (height too low for their age) : 155 million

– Number of those living in countries affected by varying levels of conflict: 122 million

– Children under 5 affected by wasting (weight too low given their height): 52 million

– Number of adults who are obese: 641 million (13% of all adults on the planet)

– Children under 5 who are overweight: 41 million

– Number of women of reproductive age affected by anaemia: 613 million (around 33% of the total)

– *The impact of conflict*

– Number of the 815 million hungry people on the planet who live in countries affected by conflict: 489 million

– The prevalence of hunger in countries affected by conflict is 1.4 - 4.4 percentage points higher than in other countries

– In conflict settings compounded by conditions of institutional and environmental fragility, the prevalence is 11 and 18 percentage points higher

– People living in countries affected by protracted crises are nearly 2.5 times more likely to be undernourished than people elsewhere[2]

DEFINITION OF KEY TERMS

Genetically Modified Foods

Genetically modified (GM) foods are foods derived from organisms whose genetic material (DNA) has been modified in a way that does not occur naturally, e.g.

[2] FAO, "World Hunger Again on the Rise, Driven by Conflict and Climate Change" FAO-News, January 1 2018

through the introduction of a gene from a different organism. Currently available GM foods stem mostly from plants, but in the future foods derived from GM microorganisms or GM animals are likely to be introduced on the market. Most existing genetically modified crops have been developed to improve yield, through the introduction of resistance to plant diseases or of increased tolerance to herbicides.[3]

Hunger

A severe lack of food.[4]

Species

A category of biological classification ranking immediately below the genus or subgenus, comprising related organisms or populations potentially capable of interbreeding, and being designated by a binomial that consists of the name of a genus followed by a Latin or Latinized uncapitalized noun or adjective agreeing grammatically with the genus name.[5]

Genus

A class, kind, or group marked by common characteristics or by one common characteristic; specifically : a category of biological classification ranking between the family and the species, comprising structurally or phylogenetically related species or an isolated species exhibiting unusual differentiation, and being designated by a Latin or Latinized capitalized singular noun.[6]

Inheritance

The reception of genetic qualities by transmission from parent to offspring.[7]

Genome

One haploid set of chromosomes with the genes they contain; broadly : the genetic material of an organism.[8]

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[3] WHO, "Food, Genetically Modified." World Health Organization
[4] Oxford Dictionaries English, "English Dictionary, Thesaurus, & Grammar Help | Oxford Dictionaries." Oxford Dictionaries | English, January 1 2018
[5] Merriam-Webster Dictionary. Merriam-Webster, n.d. Web. January 1 2018.
[6] Merriam-Webster Dictionary. Merriam-Webster, n.d. Web. January 1 2018.
[7] Merriam-Webster Dictionary. Merriam-Webster, n.d. Web. January 1 2018.
[8] Merriam-Webster Dictionary. Merriam-Webster, n.d. Web. January 1 2018.

Horizontal Gene Transfer

Also known as lateral gene transfer, the transmission of genetic material between different genomes. Horizontal gene transfer is known to occur between different species, such as between prokaryotes (organisms whose cells lack a defined nucleus) and eukaryotes (organisms whose cells contain a defined nucleus), and between the three DNA-containing organelles of eukaryotes—the nucleus, the mitochondrion, and the chloroplast. Acquisition of DNA through horizontal gene transfer is distinguished by the transmission of genetic material from parents to offspring during reproduction, which is known as vertical gene transfer.[9]

Vertical Gene Transfer

The transmission of genetic material from parents to offspring during reproduction.[10]

Desiccation

The process of spraying the crops that have been engineered to be resistant to pesticides with the very pesticides (most commonly glyphosate) just before harvest. This is done on the grounds of promoting chemical ripening, but arguably leads to the contamination of the food supply (TheDennisReport).

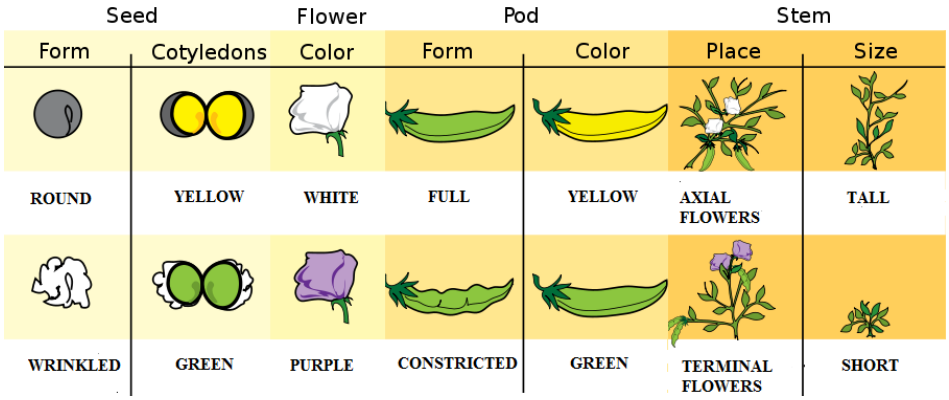
BACKGROUND INFORMATION

Before Genetically Modified Foods

Genetically Modified Foods are a sort of Genetically Modified Organisms (known as GMOs). They are foods derived from plants or animals whose DNA has been genetically engineered in some specific way, so that certain desired attributes will be expressed. Such attributes may range from superficial traits to survival qualities. Although humans have been trying to modify foods for centuries (through methods that we will later get into) genetic engineering is something new for the world community at large.

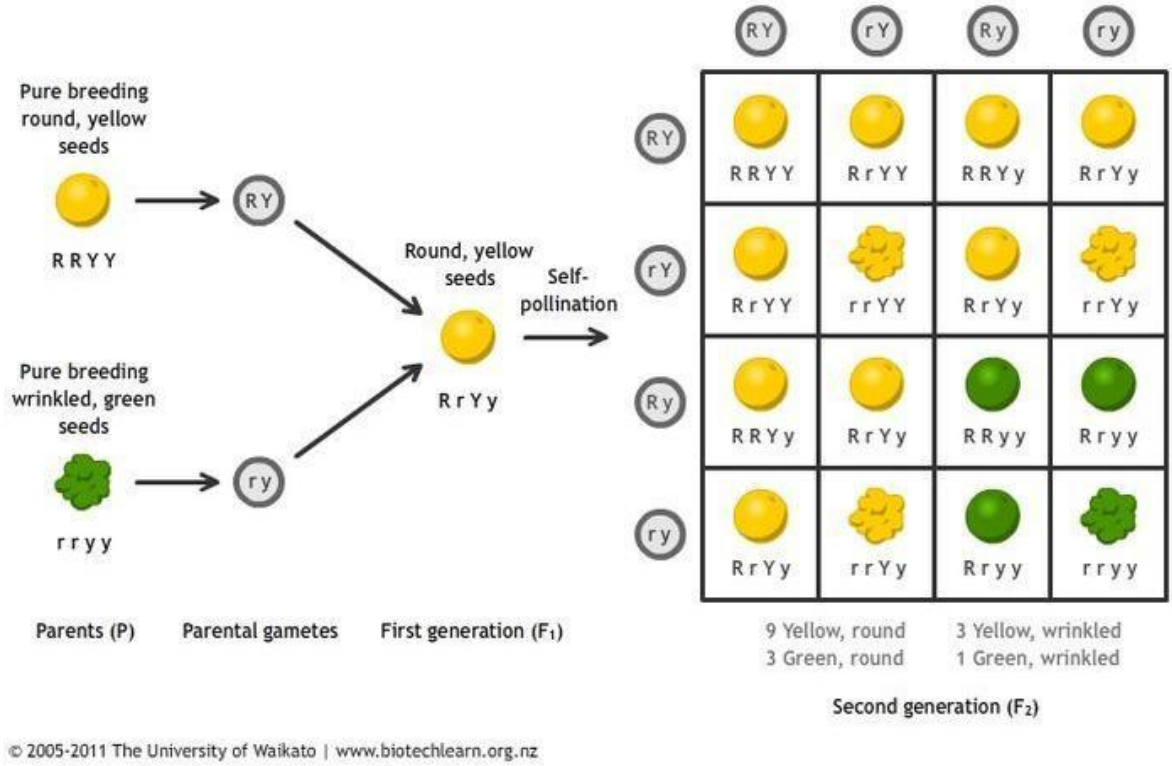
To understand where GM (Genetically Modified) foods come into play, it is vital that we map the scientific landscape leading to their creation. Organism modification (including that of foods) has its roots in the work of Austrian scientist Gregor Mendel, who established the set of hereditary rules known as Mendelian Inheritance.

[9] Encyclopædia Britannica, Encyclopædia Britannica, Inc. January 1 2018
[10] Encyclopædia Britannica, Encyclopædia Britannica, Inc. January 1 2018



#3 Various Categories of Flora

Mendel studied certain qualities of pea plants, namely plant height, pod shape and pod color, seed shape and seed color, and flower position and flower color (Mendel). Taking seed color as an example, Mendel showed that when a true-breeding yellow pea and a true-breeding green pea were crossbred, their offspring always produced yellow seeds (Mendel). However, in the next generation, the green peas reappeared at a ratio of 1 green to 3 yellow. To explain this phenomenon, Mendel coined the terms “recessive” and “dominant” in reference to certain traits (in the preceding example, the green trait, which seems to have vanished in the first filial generation, is recessive and the yellow is dominant) (Mendel). He published his work in 1866, demonstrating the role of certain factors - now understood to be and referred to as ‘genes’- in determining the traits of an organism (Mendel).



#2 Visualisation of Mendel’s Model for Inheritance

Mendel notably stated: “I am convinced that it will not be long before the whole world acknowledges the results of my work”[11] (Mendel’s Genetics), and he was, in fact, correct. As science progressed and we gained a better understanding of genetics, Mendel’s rules started making all the more sense, and the ways in which they could be applied became apparent. That is how the science of food modification began.

In time, selective breeding (the practice of breeding specimens with a desired trait together in order to instill it in future generations), a practice that had been used in the domestication of animals, became a convention. Crops were bred with the goal being to increase their potential yield, or “perfecting” their features. This practice, however, although modification by all means, is not the sort in which we are interested.

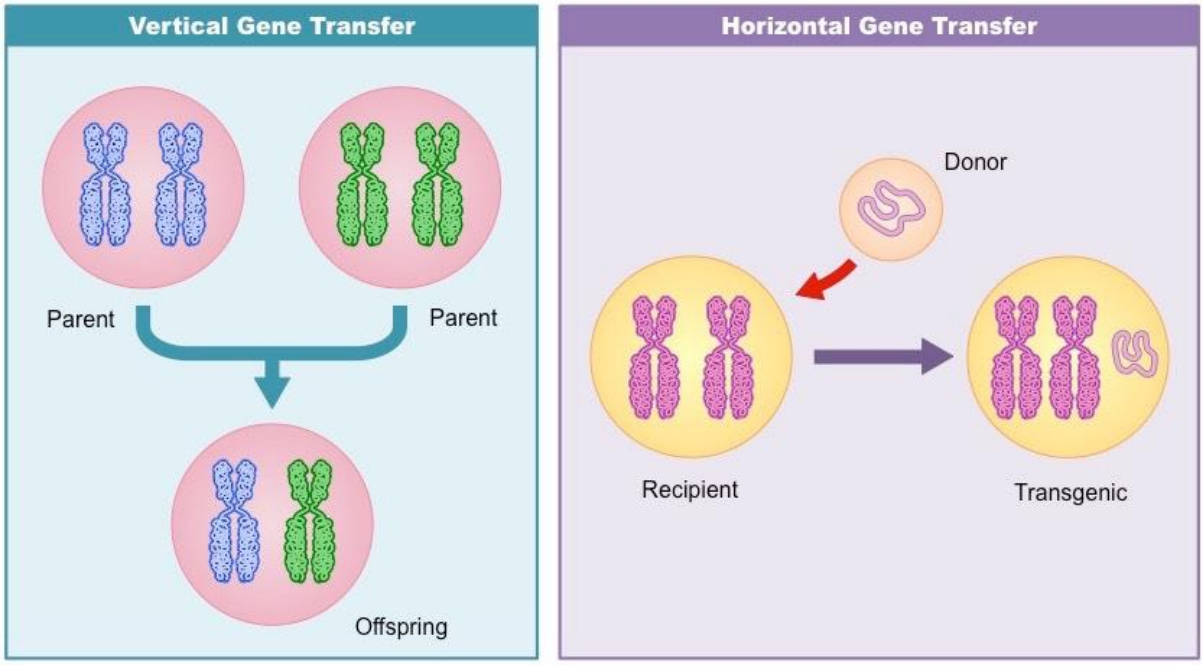
The Birth of Genetically Modified Foods

In the quest for optimization of our foods, we soon realized that some qualities would greatly improve different aspects of the foods, ranging from flavor and appearance to cultivability weather tolerance, could not simply be achieved through selective breeding, since no specimen of the same genus possessed the desired qualities.

Thus, more radical measures were needed, and that is where genetic modification comes it, as it is achieved through genetic engineering. Genetic engineering is the process of manipulating an organism's genes directly — by, for example, transplanting DNA from other organisms (Vox). The first genetically modified food to be introduced to the commercial market was the "Flavr Savr" tomato, which had been engineered to ripen more slowly.

Gene transfer in the case of GM foods is horizontal, meaning that it is taken from one organism and given to another, instead of being vertical, in which an “offspring organism” would be produced, carrying a fused alternate of the parent DNA. The diagram below illustrates the difference:

[11] “Mendel's Genetics.” Charles Darwing and Evolution 1809 2009.

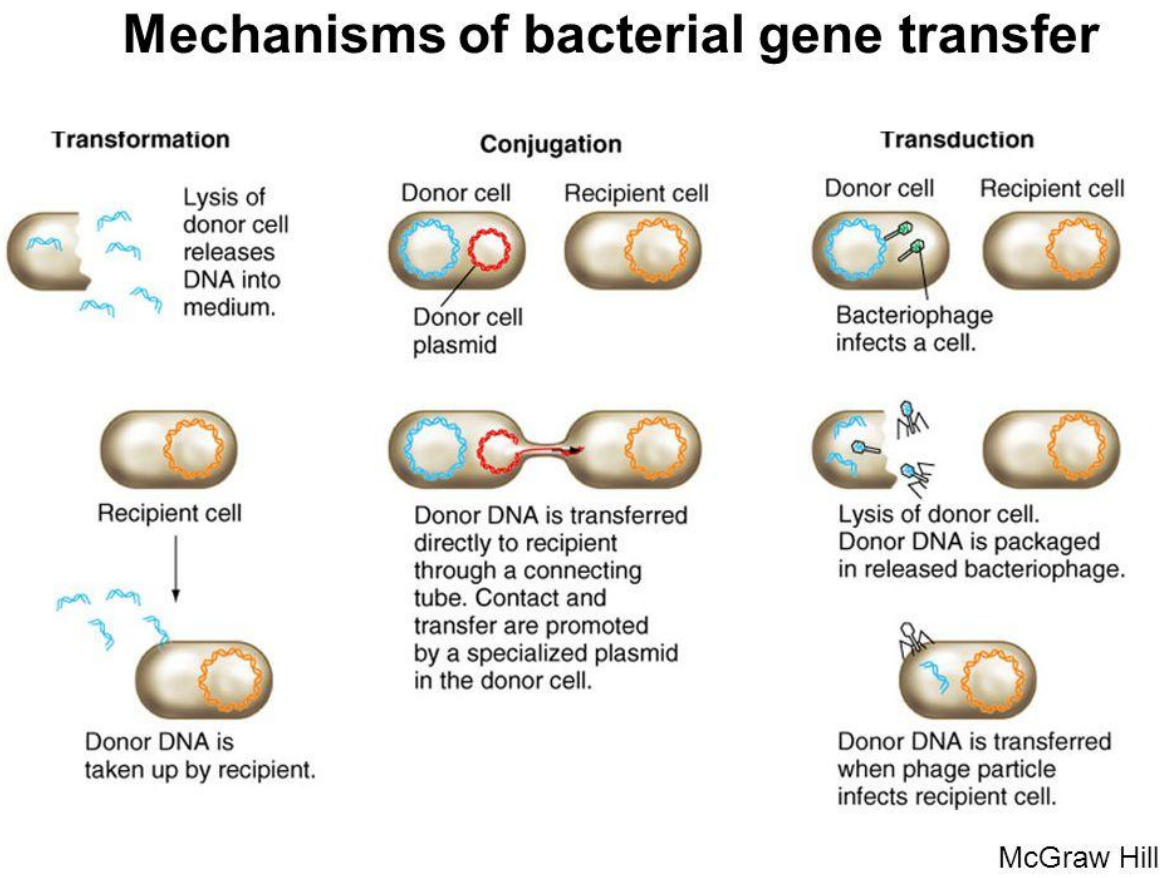


#4 Methods of Gene Transfer

GMO Debate

The issue of genetically modified organisms (genetically modified foods included) is a deeply controversial and polarizing one. There are 168 anti-GMO groups that are recognized by gmo-awareness.com, and are spread all over the world. Anti-GMO advocates have arguments ranging from simply rejecting the technology as a whole on the grounds that it is not natural, to saying that there are some things that are wrong with the corporate practice that follows genetic modification of food, and that this radical change to agriculture is not for the best. The first claim, namely that this is not natural, is something we have to clear up before we delve any deeper into the issue. It is vital to understand that, although genetic modification, to the extent that we are performing it, does not in fact happen on its own, it is only "unnatural" if we are using a very strict definition of the term. Even when we are discussing horizontal gene transfer (the sort that gives birth to GM foods, as we explained), we still can find plenty of examples where such a thing happens in nature. Bacteria are notable for performing this process, and in 3 different ways pictured below:

#5 People demonstrating against GMOs

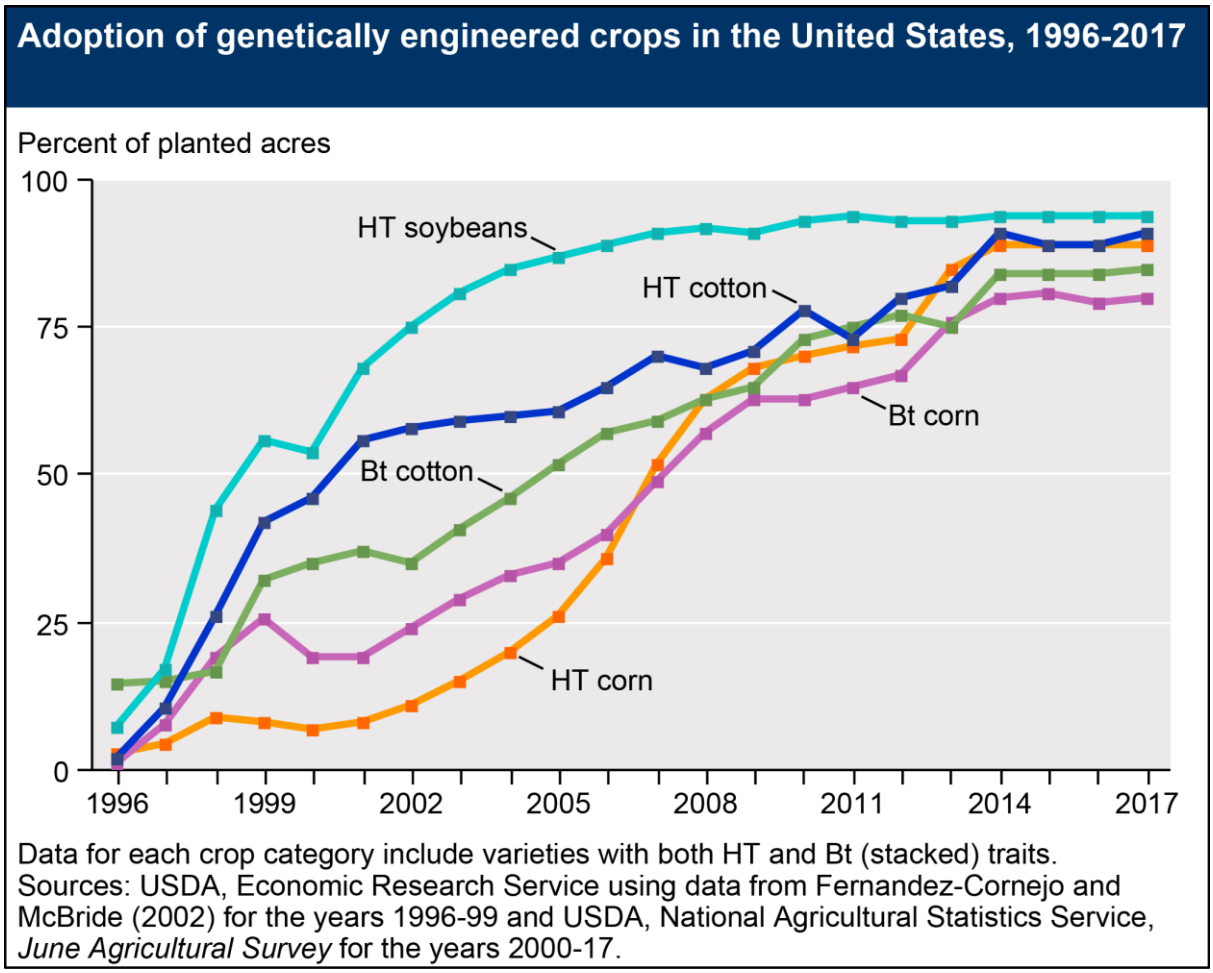


#6 Mechanisms of bacterial gene transfer

Additionally, in modifying foods, the goal is to enhance the existing food in some defined way, for example increasing its tolerance to heat, and not to create an entirely new organism. To ensure this, the Organization for Economic Co-operation and Development (OECD) has included the parameter of substantial equivalence within its food safety policy. Substantial equivalence is the initial step in determining whether or not a food is suited for induction within the market. Its testing follows a case-by-case format, in which the goal is establishing the toxicological and nutritional differences in the new food compared to a conventional counterpart (Kok). Differences are analyzed and evaluated, and further testing may be conducted, leading to a final safety assessment (Kok).

The second part of the argument against GMOs, and GM foods specifically, is one that requires closer attention. It is true that corporate practices that have followed the rise of GMOs can be questionable, and that their use is changing agriculture dramatically. The most important examples are the foods engineered in an “Ht” and “Bt” manner. Ht engineering allows for organisms to become herbicide tolerant, while “Bt” allows for organisms to have an inbuilt mechanism that functions like a natural insecticide. The graph below depicts the indicative way in which these

two technologies rose to prominence in the US, to such an extent that a rough average of 82% of all agricultural products have undergone this modification.



#7 Graph showingthe adoption of genetically engineered crops in the US from 1996 to 2017

The reason that these and other technologies are so useful, and can help in the fight against hunger, is that they make food production a lot easier. By eliminating two of the biggest factors interfering with guaranteed food yields, namely insects and plant parasites, food production is increased and guaranteed. However, two key problems arise from such an agricultural practice, which we should always keep in mind when addressing the issue. For one, genetically-engineered seeds are more expensive than those that are not engineered, which is due to the fact that the main herbicide they are designed to be resistant to is glyphosate. Glyphosate is a product that is patented by the corporation Monsanto (we will explore this in further detail later), which at this point has a successful monopoly-like control of it.

At this point however, it is worth recognizing the argumentation brought up by Monsanto on the matter. On a conversation board hosted by the company's official website, Monsanto replied to monopoly criticisms with the following

statement: “Monsanto is not a monopoly. While a lot of farmers grow crops from Monsanto’s seeds, we’re just one of hundreds of companies who sell seeds. We also license our technology to dozens of seed companies. At the end of the day, it's up to the individual farmer to decide what type and/or brand of seeds he or she wants to buy.” (Monsanto).[12]

#8 Dr. Thierry Vrain

Besides economic concerns related to the technology, however, there are several possible health concerns that ought to be addressed. Dr. Thierry Vrain, the retired head of Biotechnology Agriculture Canada Summerland Research Station, said the following with regard to the safety of GM foods: “ I realized that there was something wrong with the technology[...] rats are fed [GM foods] and they get sick, [and I thought] this is not possible, this is a very safe technology [...] and I dug a bit, and realized after a few months that it had nothing to do with the technology, and that it was the pesticide that is spread on the GMO, on the food, that is actually causing the damage”[13]. So, the larger problem that is identified is that, although the genetic modification itself does not make the product harmful in any way, the herbicide to which it is made tolerant can still harm the consumer, even if it has no effect on the plant.

To put it simply, genetic engineering on its own is perfectly fine and completely safe. However, the unregulated and uncontrolled use of pesticides (as it is in some countries) is beyond harmful. This is at the core of our issue because, if we are to utilize GM foods to combat world hunger, we want to ensure that the practice is safe and sustainable. In the absence of scientific consensus over the potential harm that can be introduced by the technology, governments are hesitant to adopt them (to different extents, as we will later discuss), and thus no global strategy has been formulated. This is where our committee's jurisdiction begins.

[12] Monsanto, “Why Are You a Monopoly.” monsanto.com/company/media/q/why-are-you-a-monopoly/. January 1 2018

[13] TheDennisReport. “Dr Thierry Vrain: Glyphosate, Food, and Your Gut (Food).” YouTube, YouTube, 7 Nov. 2017

MAJOR COUNTRIES AND ORGANISATIONS INVOLVED

Greenpeace

Of all the NGOs of its caliber, it is likely that Greenpeace has the strongest stance in relation to GM foods. On their international website, the following statement can be found: “Food is life. Food is happiness. Food is love. Our relationship with it is universal, primal, historic, rich in tradition and pride. But right now, most of us do not know where our food comes from. A greedy elite are industrializing, commodifying and controlling every aspect of our food system -- from genome to grocery store. They are growing our food on huge monoculture farms, spraying genetically modified crops with obscene amounts of chemicals and feeding these crops to factory-farmed animals.”[14] (Greenpeace International)

In response to this situation, Greenpeace has launched its own “food campaign” to support the global food movement based on "ecological farming" -- in which, as they say: “most of our food is grown ecologically, and farmers together with consumers reject toxic pesticides, chemical fertilizers and GMO seeds. It’s a future where people from all walks of life work together to build a system that is best for their families, farmers, and for the planet.” (Greenpeace International).

The position taken by Greenpeace on the issue is quite radical, and although it will not be represented in our conference, it is important to bear in mind this very fixed position of one of the world’s most prominent NGOs. In the eyes of Greenpeace, we ought to look elsewhere in order to solve world hunger, and not to GMOs.

The European Union

Although different nations and administrations of separate European countries may have differing positions on the matter, as a collective the European Union also has a rather strict approach towards GM foods and GMOs at large.

For any GMO-related activity to take place in the EU, authorization is needed (Food Safety EU). For this authorization to be granted, there is a committee that will review the experimental data and a risk assessment of the GMO in question, and will accordingly either grant or refuse authorization (Food Safety EU).

Authorizations are valid throughout the EU and may be for:

1) Cultivation (Food Safety EU)
2) Marketing of food and feed and derived products (Food Safety EU)

[14] Greenpeace International “Problem: Our Food System Is Broken.” January 1 2018

Part of the reasoning behind the EU's firm stance on GM foods is due to the threat they pose to natural pollinators such as bees and butterflies (European Parliament). Also, because their presence in an environment can cause unaccounted-for mutation and contamination in other plants (European Parliament). Additionally, due to the fact that it is only a few companies, which not EU companies, that control the GM seed market, the EU is skeptical about letting its farming community become overly dependent on such products (European Parliament).

The EU allows for GM foods to be planted and grown, but currently less than one percent of its total arable land is used for their cultivation (European Parliament). That less than one percent is also only spread among 5 countries, namely Spain, Portugal, Slovakia, and the Czech Republic (European Parliament). This land is occupied by only one type of GM food, "MON 810", which an insect-resistant (Bt) type of corn (European Parliament).

40 different GMO products have been cleared for import into the EU, and it is absolutely necessary that every single one of their GMO ingredients is labeled, unless its GMO content falls below 0.9 percent (European Parliament).

The EU has allowed for separate states to ban the cultivation of GMOs on the grounds that they may demonstrably have a negative socio-economic impact on the community (European Parliament). If they negatively affect rural planning or agricultural practices, then their cultivation can be banned by each state. It also falls to separate states to decide in what proximity they want to plant GM crops to non-GM ones (if they decide to do so in the first place) (European Parliament).

Since the EU produces so few GM products, it is not worth considering whether or not they would be exporting them, however even there it depends on specific states to decide what their policy will be on the matter (if they will accept imports or not) as long as they comply with the general EU guidelines listed above (European Parliament).

When it comes to the use of GM foods in the battle against hunger, the EU is not necessarily an opponent of their use, but it would surely be an advocate for strict regulations, and for an absolute framework where their cultivation and management is very carefully dealt with by appropriate authorities.

The United States of America

The US is home to the 4 biggest biotechnology corporations to be part of the food and agriculture business. These are:

1. Dow
2. Syngenta
3. DuPont
4. Monsanto

The genetically modified products of each corporation are patented and cannot be used unless a fee is paid to the corporations. That means that even if their products are not directly purchased by farmers, if someone wishes to use the technology the corporations have legally claimed ownership of, they have to pay a fee to the corporations.

The US Supreme Court has ruled in favor of the corporations numerous times in cases attempting to overturn this "oppressively" controlled framework, somewhat solidifying the landscape and showing that these are unlikely to change.

It is also important to note that all 4 of the corporations listed above spend a lot of money subsidizing research on their products, but critics have raised questions as to the integrity of such research, and whether or not the vested interests of the patrons affect the results it yields and the scope through which its data are handled.

Regulation of GM crops in the United States is divided among three regulatory agencies:

1. The Environmental Protection Agency (EPA)
2. The Food and Drug Administration (FDA)
3. The U.S. Department of Agriculture (USDA).

It is the first two primarily that have jurisdiction over GM products, while the 3rd plays more of an executive role in those respects.

The EPA regulates biopesticides, including "Bt" toxins, under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (FAS). If a crop is genetically engineered to carry a gene for a "Bt" toxin, EPA requires the developer to verify that the toxin is safe for the environment and conduct a food safety analysis to ensure that the foreign protein is not allergenic (FAS).

The FDA is responsible for regulating the safety of GM crops that are eaten by humans or animals (FAS). According to a policy established in 1992, the FDA considers most GM crops as "substantially equivalent" to non-GM crops (FAS). In such cases, GM crops are designated as "Generally Recognized as Safe" under the Federal Food, Drug, and Cosmetic Act (FFDCA) and do not require pre-market approval (FAS). If, however, the insertion of a transgene into a food crop results in the expression of foreign proteins that differ significantly in structure, function, or quality from natural plant proteins and are potentially harmful to human health, the FDA reserves the authority to apply more stringent provisions of FFDCA requiring the mandatory pre-market approval of food additives, whether or not they are the products of biotechnology (FAS).

In the utilization of GMOs in the fight against hunger, the US would be a willing exporter, and some of its most prominent corporations would have a lot to gain by the expansion of a market they control.

The People's Republic of China

China has been one of the first countries to latch onto the technological advancement of genetic engineering, and actually pioneered its research for many years. Recently China has been taking steps to tighten regulation around the products, making rules like those with regard to labeling stricter, all the while also working on assuring its population of their safety (CCTVAmerica1).

China took the step to ban advertising for non-GMO products that use the indirectly pejorative labeling words: "Healthier" or "Safer" (CCTVAmerica1). The goal of this is to remove the sentiment that there is something unhealthy or unsafe behind the consumption of genetically modified organisms (CCTVAmerica1).

China, however, does have a rigid safety process in place, where every genetically modified product ought to go through five safety assessment stages, and obtain a certificate of have passed all of them before it can be sold in the market (CCTVAmerica1). As the most populous country in the world, China is constantly working on ways to ensure the growth of a stable food supply/ However, as said by China's President Xi Jinping: "China needs to push forward GMO research, but should be prudent in popularizing GM foods"[15].

The Russian Federation

In July 2016 the President of the Russian Federation Vladimir Putin signed a law to ban the cultivation and breeding of genetically modified plants and animals,

[15] CCTVAmerica1. "China Increases Regulation of GMO Labeling on Foods." CCTV, 19 Nov. 2014

except in cases where they will be used in testing and scientific research (Sharoykina). In fact, this law makes Russia the world's largest GMO-free territory and offers a great platform for the development of organic agriculture (Sharoykina).

This decision made by the Russian government was also influenced by environmental organizations, farmers and other representatives of Russian society, concerned by the "absence of reliable scientific studies on the long-term ('long-term' comes here with an emphasis) risks of GMO food to human health and the environment"[16]. Although it is not true that the subject of GM foods has been studied extensively, concerns as to the qualities of that research (as we have discussed in detail earlier in this study guide) can be reasoned for.

The Kremlin has also apparently taken into consideration the interests of national food security, as the world market of genetically modified (GM) seeds is monopolized by transnational, mostly American, German and Swiss-based companies (Sharoykina). In this respect Russia stands with the European Union, but takes a far more radical stance. In the fight against hunger through the utilization of GM foods, Russia would be an advocate for uses of alternative farming methods, and the decentralization of GMO technological control.

The Countries of Africa

GM technology holds great benefits and promise for Africa, which needs to boost food output and to feed a growing population—expected to climb from 1.2 billion to 2.4 billion by 2050 (as we discussed earlier). About half of that increase is expected to occur in Africa (Cerier).

Without a sharp increase in food production, Africa faces a future of increased malnutrition and reliance on food imports to feed its growing population (Cerier). This places pressures on the balance of payments of many African countries, creating higher food prices that could spur social unrest and increased dependence on international food aid to fill the gap between domestic food production and food demand (Cerier).

Currently only four nations-- Burkina Faso, Egypt, Sudan and South Africa -- allow the cultivation of GM crops (Cerier). And of these nations, only South Africa grows GM food (Cerier). It allows the cultivation of GM corn and soybeans while all four countries, including South Africa, cultivate Bt cotton (Cerier).

[16] Sharoykina, Elena. "Moscow Bans GMO: Russia, the World's Largest GMO-Free Territory, Platform for the Development of Organic Agriculture." *GlobalResearch*, 29 Sept. 2016.

As phrased by the Genetic Literacy Project: "Africa has been reluctant to adopt GM technology for crop production. That might be changing. Recent developments suggest that many African nations are poised to overcome domestic and international opposition and embrace GM technology as a means of boosting their agriculture sector"[17].

Africa is already battling with hunger, and the circumstances are only positioned to become more dire. One way or another, some sort of technological development ought to be pursued for the continent's people to cope with the emerging (or deepening) crisis.

TIMELINE OF EVENTS

Date	Description of event
1990	FAO/WHO: Strategies for assessing the safety of foods produced by biotechnology, a joint FAO/WHO consultation.
1990	IFBC Biotechnologies and food: assuring the safety of foods produced by genetic modification. Regulatory Toxicology and Pharmacology.
1993	WHO Health aspects of marker genes in genetically modified plants. Report of a WHO Workshop.
1994	WHO Application of the principles of substantial equivalence to the safety evaluation of foods or food components from plants derived by modern biotechnology. Report of a WHO Workshop.
1996	FAO/WHO Biotechnology and food safety. Report of a Joint FAO/WHO Consultation.
1996	ILSI ILSI Allergy and Immunology Institute (AII) guidance for assessing the allergenic potential of foods derived from biotechnology.
1997	OECD Safety assessment of new foods: results of an OECD survey of serum banks for allergenicity testing,

[17] Cerier, Steven E. "Led by Nigeria, Africa Opening Door to Genetically Modified Crop Cultivation." Genetic Literacy Project, 3 Dec. 2017.

	and use of databases.
1998	OECD Report of the OECD workshop on the toxicological and nutritional testing of novel foods.
2000	FAO/WHO Report of a Joint FAO/WHO Expert Consultation on foods derived from biotechnology – safety aspects of genetically modified foods of plant origin.
2000	CAC First session of the Codex ad hoc Intergovernmental Task Force on Foods Derived from Biotechnology
2001	FAO/WHO Allergenicity of genetically modified foods, a joint FAO/WHO consultation on foods derived from biotechnology.
2001	CAC Second session of the Codex ad hoc Intergovernmental Task Force on Foods Derived from Biotechnology.
2002	OECD Report of the OECD Workshop on the nutritional assessment of novel foods and feeds.
2002	CAC Third session of the Codex ad hoc Intergovernmental Task Force on Foods Derived from Biotechnology.
2002	WHO The stakeholders' meeting on WHO draft document "WHO – modern food biotechnology, human health and development: an evidence-based study".
2003	CAC Fourth session of the Codex ad hoc Intergovernmental Task Force on Foods Derived from Biotechnology.
2003	OECD Report on the questionnaire on biomarkers, research on the safety of novel foods and feasibility of post-market monitoring.
2006	FAO expert consultation on biosafety within a biosecurity framework: Contributing to sustainable agriculture and food production.

RELATED UN RESOLUTIONS AND PREVIOUS ATTEMPTS TO RESOLVE THE ISSUE

Universal Declaration on the Eradication of Hunger and Malnutrition[18]

The Declaration was adopted on 16 November 1974 and recognizes the issue of world hunger and adopts measures to resolve it.

Resolution 50/109 on the World Food Summit[19]

The resolution was adopted by the General Assembly on the 20th of December 1995 and invites member states to participate more actively in efforts to eradicate world hunger.

ECOSOC Resolution 2008/28

The resolution requests member states and organizations to further fund the eradication of world hunger.

A/RES/63/187[20] and Resolution adopted by the General Assembly on 22 December 2008

The resolutions above hope to establish world hunger and food security as part of the agenda of the General Assembly.

Goal 2 of the Sustainable Development Goals[21]

The goal opts for development and eradication of hunger.

United Nations Statement Regarding the use of GM Foods as Food Aid in Southern Africa

The UN affirms that the final decision for the use of GMFs to aid the hunger issue rests upon local governments.

Zero Hunger Challenge

The challenge aims at the increase of food production to eradicate world hunger.

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POSSIBLE SOLUTIONS

For win the fight against hunger, we need to take several approaches and tackle the issue from varied angles. Before we even address the entire possibility of utilizing GM foods as part of our effort, we need to concentrate on increasing logistical efficiency, improving or establishing food distribution mechanisms, and minimizing food waste. If those parts of the problem are not addressed, then any measure related to GM technology will have its impact drastically lessened.

When it comes to the introduction of the technology, it is vital that we think of the legal framework that would accompany its utilization. Drastic measures and sweeping changes are bound to provoke reactionary attitudes from the public, which will lead to unrest. This is why GMO implementation should be standardized, and ideally under a global standard. Additionally, the negative attitudes of some communities towards the corporations controlling the technology will not be dismissed, and a perfect way to address those would be to facilitate the organization of informational gatherings and summits, where experts in the scientific community and figures from within the industry talk with ordinary citizens about their concerns. One way or another, it is vital that some of the misconceptions with regard to GM foods be cleared up, so that the public may become more receptive towards the products.

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