UNITED NATIONS ECONOMIC AND SOCIAL COUNCIL

GAUCHOMUN XV

General Assembly

GAUCHOMUN XV

UCSB Model UN

A WORD FROM SECRETARIAT

GauchoMUN XV has a conference-wide zero-tolerance policy for any forms of bigotry, including but not limited to homophobia, sexism, racism, and xenophobia. Be mindful of this as you research, speak, and write. It is our duty as global citizens and students of diplomacy to ensure our views are unbiased, fair, and equitable.

The mandate of this committee includes the discussion of developing global political situations, parts of which may be considered sensitive and personal to your fellow delegates. In accordance with our zero-tolerance discrimination policy, we ask that delegates be mindful in the ways they approach these topics in their research and in committee session. If you are unsure or confused about how to navigate within our policies, please feel free to contact your Dais or Secretariat, who are happy to provide you with direction.

A Word From Secretariat

Dear Delegates,

Welcome to GauchoMUN XV! My name is Kirra Moore and it is my pleasure to serve as the Under-Secretary-General of General Assemblies and Specialized Bodies this year.

I am a first-year at UCSB studying Political Science. I am from Laguna Beach, CA in Orange County. I participated in MUN for all four years of high school and 3 years of middle school. On the collegiate circuit, I have competed in TrojanMUN 2023, served as Chair of JCC: Communist Party in SBIMUN XIV, and will be competing in McMUN 2024. MUN has been such a constant throughout my life and I am so excited to share that with you. It has taught me public speaking skills and diplomacy.

Outside of MUN, I love hanging out with my friends, going to the beach and being active in general. I'm also a member of Kappa Kappa Gamma in the chapter here at UCSB. After undergrad, I hope to attend law school and go somewhere on the East Coast!

If you have any questions, comments, or concerns, please feel free to contact me at my email listed below!

Good luck with your papers,

Kirra Moore (*she/her*)

kirramoore@ucsb.edu

Under-Secretary-General of General Assemblies and Specialized Bodies

GauchoMUN XV

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Letter from the Chair

Esteemed Delegates,

With great enthusiasm, I extend a warm welcome to each one of you to the upcoming session of the Economic and Social Council (ECOSOC). It is an honor to address you as we prepare for the 15th GauchoMUN. From my experiences as a delegate at to now serving as the Secretary-General of this conference, I am thrilled to lead an event that promises to be impactful and memorable. Our mission at ECOSOC echoes the values upheld by GauchoMUN – to provide a dynamic platform for young leaders like yourselves to engage in meaningful debate and collaborative problem-solving. This year, we are committed to continuing the tradition of fostering a new generation of changemakers.

Truus Van de Graaf, ECOSOC Chair

truus@ucsb.edu

Welcome Delegates!

My name is Sachi Lakhina, I am a 2nd-year Political Science and Communication Studies double major! I am a first-year member of the UCSB Model UN team, and I am extremely excited to be a part of the annual GauchoMUN conference. Although this is my first year doing Model UN, I was a part of Mock Trial all four years of high school and am excited to be engaging in a similar academic team once again. Aside from Model UN, I am also a part of UCSB Taara – UCSB's national competitive Bollywood fusion dance team.

As we near GauchoMUN 2024, the entirety of UCSB's Model UN team and I are excited to hear the inspiring and insightful propositions and resolutions that will be presented by all the delegates during the coming conference. The ECOSOC committee will be focusing on two principal issues for the course of the weekend: regulations on gene editing and the impacts of genetically modified organisms. As you prepare for this conference, we understand the importance of having comprehensive and insightful background information to guide your discussions and resolutions. We are thrilled to have you join us for what promises to be an engaging and intellectually stimulating experience.

We wish you the best in your preparations and look forward to witnessing your thoughtful contributions to the discussions at GauchoMUN. If you have any questions about Model UN, UCSB, college, or anything else that comes to mind, please feel free to contact me. I look forward to seeing you all soon!

Sachi Lakhina, ECOSOC Co-Chair

sachilakhina@ucsb.edu

Committee Mandate

One of the six main United Nations organizations is the Economic and Social Council. It serves as the primary platform for debating global economic and social concerns as well as for developing policy recommendations for the UN organization and its member states. It is accountable for advancing higher living standards, full employment, and economic and social advancement; finding solutions to global economic, social, and health problems; fostering international cooperation in the arts and in education; and promoting the utmost respect for fundamental freedoms and human rights.

TOPIC A: Developing regulations on the effects of growing advancements in genetic engineering and biotechnology

Background

The rapid advancement of CRISPR gene-editing technology has ushered in a new era of possibilities and challenges in the field of biotechnology and the life sciences. This revolutionary technology, characterized by its ease of use, high precision, and cost-effectiveness, has garnered significant attention due to its potential applications in various domains, including medicine, agriculture, and environmental conservation.[1]

The implications of CRISPR technology extend beyond scientific and technological realms, giving rise to profound ethical and bioethical considerations. The use of genome editing technologies, including CRISPR-Cas9, has sparked discussions on social, legal, and ethical consequences, particularly in the context of human germline cells and the environment. These discussions have emphasized the need for a balanced approach that takes into account the perspectives of scientists, policymakers, and other stakeholders, while also ensuring that scientific freedom is upheld without compromising ethical principles.[2]

Furthermore, the rapid progress in genome editing has prompted a growing need for international discourse to address the uncertainties and ethical concerns associated with the advantages and disadvantages of CRISPR technology. The evolving regulatory frameworks for gene therapy and

[1] https://sustainabledevelopment.un.org/content/documents/955511_Soltau_CRISPR-Cas9%20_%20gene-editing%20technology%20takes%20off.pdf
[2] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7129066/.

the broader implications of CRISPR technology, not only in human applications but also in relation to plants and animals, have become a focal point for the United Nations.

Past UN Involvement

Economic:

The economic implications of genetic engineering, particularly in the context of CRISPR technology, are significant and multifaceted. The potential economic disparities among countries with varying access to and capabilities in biotechnological advancements are a key concern. The application of gene drives made possible by gene editing technologies, such as CRISPR, has the potential to have profound economic implications, comparable to the Green Revolution or crop biotechnology. It is essential to consider the economic equilibria, general policy recommendations, and the wide variety of possible outcomes resulting from the development and deployment of gene drives.

Furthermore, equitable access and technology transfer related to genetic engineering are important aspects that need to be addressed at the international level to ensure that the benefits and costs of these technologies are fairly distributed. The role of the UN in promoting equitable access and technology transfer in the field of genetic engineering is crucial.

Social and Cultural Considerations:

The social and cultural dimensions of genetic engineering, particularly in the context of CRISPR technology, encompass a wide array of considerations. These dimensions involve diverse perspectives on the use of genetic engineering in medicine, agriculture, and

environmental conservation. It is essential to explore and understand the social and cultural implications of genetic engineering, as they play a significant role in shaping public attitudes, ethical frameworks, and policy decisions related to these technologies[3].

Inclusivity and engagement of diverse communities in decision-making processes related to the development and deployment of genetic technologies are of paramount importance. This includes understanding and respecting diverse cultural, religious, and social perspectives on genetic engineering, as well as ensuring that the benefits and risks of these technologies are fairly and transparently communicated to all stakeholders. The involvement of diverse communities in decision-making processes can help address concerns related to genetic privacy, confidentiality, and the potential for discrimination based on genetic characteristics. It also fosters a more comprehensive and inclusive approach to the governance of genetic engineering, ensuring that a wide range of perspectives and considerations are taken into account.[4]

Open dialogue, international collaboration, and robust regulatory frameworks are essential for harnessing the power of genetic manipulation while preserving core ethical values.

Gene Editing

Genome editing technologies empower scientists to modify DNA, resulting in alterations to physical characteristics such as eye color and susceptibility to diseases.[5] Gene editing, particularly with the revolutionary CRISPR-Cas9 technology, has become a focal point in genetic engineering, introducing profound implications that extend to ethical, social, and regulatory domains. CRISPR-Cas9 enables precise modifications to genes by cutting and

[3] https://www.un.org/development/desa/dpad/publication/frontier-technology-quarterly-may-2019/
[4] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9223088/
[5] https://www.genome.gov/about-genomics/policy-issues/what-is-Genome-Editing

replacing DNA sequences, offering unparalleled versatility across a spectrum of organisms. In human applications, gene editing holds promise for therapeutic interventions, addressing genetic disorders through the correction or replacement of faulty genes.[6] However, the prospect of editing the human germline introduces ethical dilemmas, sparking concerns related to informed consent and the potential creation of "designer babies" with selected traits. In agriculture, gene editing is leveraged to develop genetically modified organisms (GMOs), enhancing crops with resistance to pests, diseases, or challenging environmental conditions. Despite the potential benefits, the release of gene-edited organisms into the environment raises ecological concerns, necessitating robust biosafety measures. The regulatory landscape for gene editing varies globally, emphasizing the need for consistent international guidelines to navigate the ethical complexities and potential risks associated with these technologies. Additionally, intellectual property issues surrounding the patentability of gene-editing technologies and edited genetic material raise questions about accessibility and equitable distribution of benefits. As the field of genetic engineering advances, the debate on developing regulations becomes crucial, considering the intricate interplay between scientific innovation, ethical considerations, and the global impact of gene editing technologies.

CRISPR

CRISPR-Cas9, a revolutionary genome editing technology, has transformed the landscape of genetic engineering since its invention in 2009.[7] The acronym "CRISPR" stands for Clustered Regularly Interspaced Short Palindromic Repeats, which are specific DNA sequences found in bacteria. The "Cas9" component refers to the Cas9 protein, an enzyme that acts like molecular

[6] https://www.genome.gov/about-genomics/policy-issues/what-is-Genome-Editing
[7] https://www.genome.gov/about-genomics/policy-issues/what-is-Genome-Editing

scissors. The brilliance of CRISPR-Cas9 lies in its ability to precisely target and edit specific DNA sequences within an organism's genome. It allows scientists to cut the DNA at desired locations, facilitating the removal, addition, or replacement of genetic material. Compared to earlier genome editing methods, CRISPR-Cas9 is characterized by its simplicity, speed, cost-effectiveness, and remarkable accuracy. This technology has democratized genetic manipulation, enabling researchers worldwide to conduct experiments and interventions with unprecedented ease. While CRISPR-Cas9 holds tremendous promise for therapeutic applications, such as treating genetic disorders, it has also raised ethical concerns, particularly regarding the potential for unintended consequences and the ethical implications of editing the human germline. The continuous development and refinement of CRISPR technologies underscore the need for robust ethical frameworks and regulatory guidelines to navigate the complex ethical, social, and scientific dimensions of gene editing.

Biotechnology

Biotechnology, a dynamic and interdisciplinary field that integrates biology and technology, has undergone rapid advancements, necessitating the establishment of comprehensive regulations to address ethical, safety, and environmental considerations. This multifaceted discipline involves the manipulation of biological systems and organisms to develop innovative products and processes. Genetic engineering and gene editing are pivotal components of biotechnology, enabling precise modifications to DNA and influencing various sectors, including medicine, agriculture, and industry. In medicine, biotechnology has paved the way for the production of cutting-edge pharmaceuticals, personalized medicine, and advancements in diagnostics and

treatments.[8] Agricultural biotechnology has contributed to the development of genetically modified crops with improved traits such as increased yield, pest resistance, and environmental adaptability. Industrial applications of biotechnology include the creation of biofuels, enzymes, and sustainable materials, revolutionizing manufacturing processes. Given the diverse applications and potential implications of biotechnology, regulatory frameworks vary globally, with countries establishing specific guidelines to ensure responsible practices. These regulations encompass thorough assessments of potential risks and benefits, environmental impact evaluations, and considerations of ethical implications associated with biotechnological activities. The evolving nature of biotechnological innovations underscores the ongoing need for adaptable and effective regulatory measures, striking a balance between fostering innovation and safeguarding ethical, safety, and environmental standards.

[8] https://www.bio.org/what-biotechnology

Guiding Questions

1. How do we ensure that genetic engineering and biotechnological advancements align with ethical standards and respect human rights?
2. How can regulations promote responsible and sustainable biotechnological practices to safeguard ecosystems?
3. How can regulations ensure the containment and safe handling of genetically modified organisms in various settings?
4. What transparency measures should be in place to keep the public informed about biotechnological developments?
5. How can regulations address issues of access and equity in the application of genetic engineering technologies?
6. How can regulations facilitate international collaboration and information-sharing on genetic engineering research and its outcomes?

Sources

Biotechnology Industry Organization. "What is Biotechnology." Link

National Human Genome Research Institute. "What is Genome Editing." Link

United Nations, Department of Economic and Social Affairs. "Frontier Technology Quarterly - May 2019." Link

National Center for Biotechnology Information. "Genomic Editing: Ethical and Legal Considerations." Link

North Carolina State University. "Economic Issues to Consider in Gene Drives." Link

Office of the United Nations High Commissioner for Human Rights. "Universal Declaration on the Human Genome and Human Rights." Link

United Nations Economic and Social Council. Link

UNESCO. Link

United Nations. "CRISPR-Cas9 and Gene Editing Technology Takes Off." Link

National Center for Biotechnology Information. "Ethical and Regulatory Considerations for CRISPR/Cas9 Gene Editing Technology." Link

Background

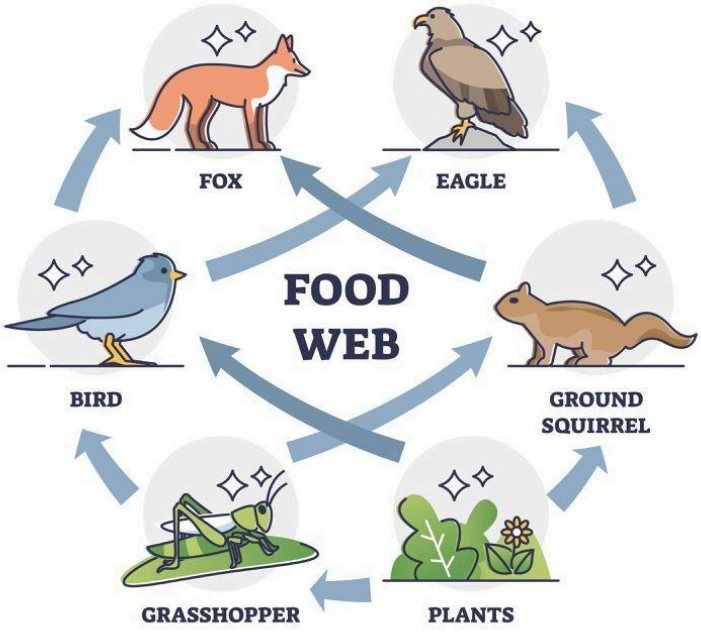
As technology has become increasingly important to society, the idea of genetically modified organisms has also become more prevalent. Whether in the form of genetically modified foods, 'designer' babies or even changing the genes of animals the consequences of GMOs have been felt around the globe. When speaking on the subject there are two common terms; the first of which being genetically modified organisms or GMOs, this refers to the idea of using hereditary genes in order to make improvements upon plants and animals for specific uses. An example of this is GMO food; corn specifically has been bred over years in order to become more resistant to insects or increase its tolerance when it comes to herbicides. Some more examples of genetically modified foods can be corn, soybeans, papaya, canola and so many more. Each of these foods have been modified either to affect taste, size, crop durability or even aesthetics. This term additionally encompasses the second when used in academic papers. The second term is genetically engineering or GEO. This is a more specific way of how organisms are modified, these organisms are produced through genetic engineering. This is the direct manipulation of an organism's genes through biotechnology. While one takes hundreds of years to perfect, genetic engineering can go in and make specific changes to an organism. An example of this is changing the genes in a baby to make them taller or to remove a genetically inherited disease.[9] These two terms do have subtle differences, however this committee will use the term GMO as an umbrella term which encompasses the idea of GEOs as well. Foods are the most common forms of genetic engineering yet there are other forms that are becoming more popular.

[9] This committee will largely focus on the use of genetically modified foods, crops or animals

Genetically modifying embryos has become a controversial issue as it leads to ethical concerns. This would come in the form of removing genetically inherited diseases from embryos or could lead to ‘designer babies’ mentioned above where those able to pay for genetically modified embryos could have superior athletic abilities or intelligence.

Experts have begun to witness negative ecological effects stemming from GMOs These include existing species being overrun by newer, dominant species. In the past this had occurred with invasive species; a plant or animal that was new in its habitat and began to expand its range further from the site of original introduction. This causes harm to their environment as well as native species. GMOs are affecting the environment in a similar way; when these genetically modified plants and animals are introduced into their environment, they have the potential to

affect the biodiversity of an ecosystem. For example, if a cow species that had been modified over time to be leaner and bigger to suit those who enjoy eating meat were to be let out into the wild, it would soon overtake grazing pastures that smaller cows enjoyed because of its larger size; this would deplete the grass supply in an ecosystem and therefore harm all creatures dependent on said grass (mainly herbivores which would then effect carnivores) overall causing an ecological disaster



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Looking specifically at crops, many GMOs may cause allergic reactions in humans. While it can be asked “how are these GMO foods causing allergies when a person is not allergic to the original food?” Yet the new DNA introduced can trigger allergic reactions in people who do not normally have an allergy to that food. For example a soybean crop was created using DNA from a Brazil nut which triggered those with nut allergies even though they had avoided actual nuts (Business Insider). Additionally, the use of GEOs may contribute to the ever growing

antibiotic resistance epidemic. Antibiotic resistance is when germs and bacteria begin to develop the ability to defeat drugs that had previously stopped them creating a super germ. GEO foods are contributing to this problem through the actual genes that are being inserted into them. In many cases the DNA that is inserted has used modified antibiotic resistant cells to kill off plant cells that did not use the new DNA. In many cases these cells are passed through the body after being digested into the feces where they are then absorbed by harmful bacterias. These bacterias use these cells in order to resist common antibiotics which can cause serious illness such as staph infections.

While GMOs may pose potential dangers they do have many positive effects on society as well. One of the most common ideas surrounding GMOs and GEOs is the idea that they are the answer to ending world hunger. Genetically modified crops are proven to improve the amount of crops produced. This means that crops may become cheaper which will vastly improve food insecurity. Additionally, crops can be engineered to be more nutritious which will help improve health and with a higher resistance to bacteria creating crops that will not be subject to pests. In order to end world hunger there are various steps that need to be taken before GMO foods can be the final answer. Currently, many GMO crops are produced by several large companies that also own patents protecting their various technologies meaning it is difficult to get mass produced seeds to farmers around the world. Furthermore a large proportion of food insecure peoples are in areas where GMO foods are rarely produced due to being difficult to acquire, this means that while GMOs could be a potential solution to world hunger it is unable to get to those who need it most.

GMO foods can also decrease the amount of harmful chemicals that go into producing foods. Often in the past pesticides were needed to produce foods as ants, flies and other harmful

critters would eat crops before they were able to be harvested. This prompted the use of pesticides which are chemicals that would be sprayed over crops in order to kill and ward off any unwanted bugs. Since GMO technology has been used chemical pesticides have been reduced by 8.3% (healthline).

Past UN Involvement

The United Nations has an extremely active stance on this topic as the technology is rapidly developing. Dating as far back to 2004, the United Nations called for new measure to be used to boost safety in trading GMOs. in the Cartagena Protocol of Biosafetyt the delegations decided that all shipments of GMOs intended for food must be identified as “may contain LMOs (living modified organisms)” (United Nations UN News). More recently in 2019, the United Nations sent out their Technology Quarterly and dedicated an article to the positives and negatives of genetically modified organisms. In said article the United Nations essentially

conceded that genetic technology can have its positives both in foods as well as future disease control yet there were many downsidies including a divide in healthcare and major ethical concerns when it comes to genetically modifying human beings. They called for the need to find

an appropriate balance between the two as there are benefits but the unintended consequences must be considered as well. In an UN Chronicle article on world hunger, Kaiser Jamil, a biotechnologist and president of the Third World Organization for Women in Science, called for the use of biotechnology in solving world hunger.

Outside of the United Nations there are several Non-Government Organizations that should be taken into consideration in this committee. Greenpeace USA, US Food Sovereignty Alliance, the Non-GMO project and Slow Food Europe are notable organizations against the use of GMOs. Bill & Melinda Gates Foundation, JICA, and the DFID are organizations in favor of GMOs.

Country blocs

Below you will find **extremely brief** country bloc policies. Please note your country may have different feelings on GMOs besides the general consensus.

African States

There is a current controversy in the African states over GMO food aid. In Zambia specifically they have barred any genetically modified foods due to health concerns. Many other African nations find themselves in a similar dilemma, whether to let their citizens use genetically modified foods or let many of their citizens starve to death. The UN World Food Programme provided thousands of tonnes of emergency food but several governments in the region have rejected said donations. Many African groups have anti-GM groups that have been targeting GMO foods as unsafe and spread many myths about GMO foods.

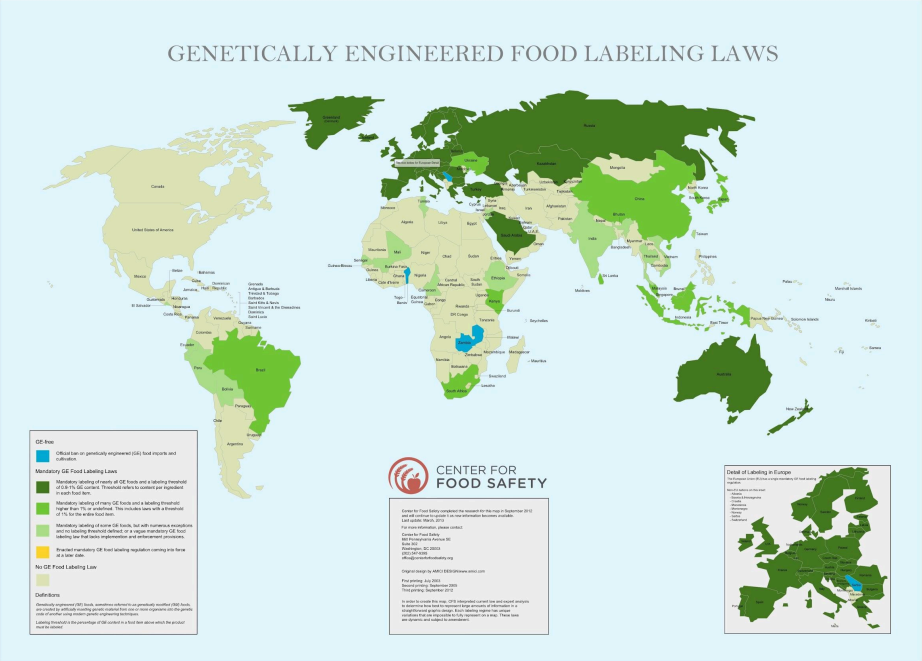
Asia-pacific states

India and China are two of the largest producers of GMO products in Asia. Almost every country imports GMO crops. Many countries within this bloc have regulatory systems for approving the commercialization of GMO crops. Many of the controversies surrounding GMOs in Asia stem from various cultures and diets. One of the main concerns facing local Asians are small-scale farmers who are unable to keep up with the mass amounts of GMO foods that are being produced and imported. Additionally many Asia-pacific countries have concerns about potential allergens in foods and long term effects. Owing to large populations in many Asia-Pacific nations many experts are expecting GMOs to be an increasingly important part of various diets in these countries.

European States[10]

The issue of GMO foods in European states is a hot-button topic . Many European nations do use and grow GMO foods, including Spain, Portugal, Czech Republic, Romania and Slovakia, however many countries are severely against GMO foods. One cause of European opposition to GMOs was the way that GMOs were publicized in the 1990s. Public opinion has been strongly marked by negative views on GMOs and have not shifted greatly since. It is of note that the people of France are most strongly anti-GMO, they are strongly opposed by various NGOs and unions.

[10] Using European States rather than Eastern European and Western States as both have similar opinions on the topic at hand



Latin American and Caribbean States

These countries are at various stages when it comes to the regulation of GMOs and their various policies on it. Some countries are regulating every GMO or even band their use including Mexico and Peru whereas others have still only just begun to analyze how they will regulate gene editing such as Panama. Each nation has chosen different approaches, some are extremely cautious while others have no specific legislation.

Western European and other States [11]

Traditionally western countries (excluding European countries) are among the biggest consumers of GMOs. The United States of America is currently the biggest consumer of GMO crops and

[11] As stated earlier european states are included under “European States” this category includes traditionally Western states such as the United States of America and Canada

was the first country introduced to GMOs. Many other nations in the Western world are supporters of GMOs as long as regulations are in place such as Canada.

Questions to consider

How can we ensure that GMOs are used ethically in a time where profit is deemed most important by many parties?

How can we weigh the positives and negatives of using GMOs in crops and animals?

Can GMOs be a viable solution to ending world hunger?

Is there a better alternative?

How can the ethical conundrums behind GMOs be addressed?

How can the harmful effects of GMOs be curbed in regards to ecological systems throughout the world?

Sources

"Africa's Anti-GMO Activists Spread Myths and Fear but Do Not Provide Any Scientific Evidence." *Alliance for Science*, 4 Aug. 2023, allianceforscience.org/blog/2023/08/anti-gm-crops-activists-in-africa-spread-fear-and-myths-but-do-not-provide-scientific-evidence/. Accessed 16 Jan. 2024.

"Agricultural Biotechnology Glossary." *USDA*, www.usda.gov/topics/biotechnology/biotechnology-glossary#:~:text=Genetically%20engineered%20 organism%20(GEO)%3A,or%20other%20 more%20traditional%20methods. Accessed 16 Jan. 2024.

"Are Genetically Modified Crops the Answer to World Hunger?" *Education | National Geographic Society*, education.nationalgeographic.org/resource/are-genetically-modified-crops-answer-world-hunger/. Accessed 16 Jan. 2024.

"BIP - Why Are Most Europeans Opposed to GMOs? - Factors Explaining Rejection in France and Europe." *SciELO - Scientific Electronic Library Online*, scielo.conicyt.cl/fbpe/img/ejb/v6n1/a04/bip/. Accessed 16 Jan. 2024.

"The Brussels Times." *The Brussels Times*, www.brusselstimes.com/366606/ngos-hold-rally-outside-european-parliament-against-gmo-deregulation. Accessed 16 Jan. 2024.

"Consequences of GMOs for Biodiversity." *Information from the Government of the Netherlands | Government.nl*, 30 July 2018, www.government.nl/topics/biotechnology/consequences-of-gmos-for-biodiversity#:~:text=Genetic%20modification%20produces%20genetically%20modified,considered%20during%20the%20licensing%20procedure. Accessed 8 Jan. 2024.

Cyranoski, David. "The CRISPR-baby Scandal: What's Next for Human Gene-editing." *Nature*, 26 Feb. 2019, www.nature.com/articles/d41586-019-00673-1. Accessed 16 Jan. 2024.

"Devex.com." *Devex.com*, www.devex.com/news/who-are-the-donors-taking-on-gmos-91951. Accessed 16 Jan. 2024.

"GMO Crops, Animal Food, and Beyond." *U.S. Food and Drug Administration*, 3 Aug. 2022, www.fda.gov/food/agricultural-biotechnology/gmo-crops-animal-food-and-beyond. Accessed 16 Jan. 2024.

Kennedy, Madeline, and Samantha Cassetty. "Pros and Cons of GMOs: An Evidence-based Comparison of Genetically Modified Foods." *Business Insider*, 24 Oct. 2022, www.businessinsider.com/guides/health/diet-nutrition/gmo-pros-and-cons#:~:text=GMO%20 foods%20are%20designed%20to,reactions%20or%20 increased%20 antibiotic%20 resistance. Accessed 16 Jan. 2024.

Manda, Olga. "Controversy Rages over 'GM' Food Aid." *Africa Renewal*, 14 July 2020, www.un.org/africarenewal/magazine/february-2003/controversy-rages-over-gm-food-aid. Accessed 14 Jan. 2024.

The Non-GMO Project - Everyone Deserves an Informed Choice, 11 Dec. 2023, www.nongmoproject.org/. Accessed 16 Jan. 2024.

"Plant Sciences and Modern Agriculture." *CropLife Canada*, croplife.ca/facts-figures/gmos-in-canada/#:~:text=Farmers%20in%20Canada%20have%20been,farmers%2C%20the%20environment%20and%20 consumers. Accessed 16 Jan. 2024.

Raman, Ryan. "GMO Pros and Cons, Backed by Evidence." *Healthline*, www.healthline.com/nutrition/gmo-pros-and-cons#pros. Accessed 16 Jan. 2024.

"Regulation Of Genetically Edited Crops In Latin American And Caribbean Countries." *SAIFood*, 27 Sep. 2023, saifood.ca/genetically-edited-crops-in-lac/. Accessed 16 Jan. 2024.

"The UN Announces New Measures to Boost Safety in Trade of Genetically Modified Organisms." *UN News*, 27 Feb. 2004, news.un.org/en/story/2004/02/95482. Accessed 16 Jan. 2024.

Undefined. "An Asian Perspective on GMO and Biotechnology Issues." *PubMed*, Accessed 12 Jan. 2024.

United Nations. "Biotechnology – A Solution to Hunger?" *United Nations*, www.un.org/en/chronicle/article/biotechnology-solution-hunger. Accessed 14 Jan. 2024.

"What Exactly is Antibiotic Resistance?" *Centers for Disease Control and Prevention*, 5 Oct. 2022,

www.cdc.gov/drugresistance/about.html#:~:text=About%20Antimicrobial%20Resistance,-Print&text=Antimicrobial%20resistance%20happens%20when%20germs,and%20sometimes%20impossible%2C%20to%20treat. Accessed 16 Jan. 2024.

"What GM Crops Are Being Grown and Where?" *Welcome to the Royal Society | Royal Society*, royalsociety.org/topics-policy/projects/gm-plants/what-gm-crops-are-currently-being-grown-and-where/#:~:text=Among%20the%20 countries%20growing%20GM,leading%20county%20(0.1%20 Mha). Accessed 16 Jan. 2024.

"What GM Crops Are Being Grown and Where?" *Welcome to the Royal Society | Royal Society*, royalsociety.org/topics-policy/projects/gm-plants/what-gm-crops-are-currently-being-grown-and-where/. Accessed 16 Jan. 2024.