**FORUM:** Commission on Science and Technology for Development

**QUESTION OF**: Measures to Develop Guidelines Regarding Research on Gene Editing

**SUBMITTED BY:** Russia

**CO-SUBMITTED BY:** Japan, Mexico, China, Somalia, Democratic People’s Republic of Korea

COMMISSION ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT,

*Realizing* it is essential to construct guidelines regarding research on gene editing, including measures to protect human rights and keep individual characteristics,

*Bearing in mind* that there were examples of grievous events in the history of human subjects participating in research,

*Alarmed by* that there has been a case of the research on a gene that caused negative impacts on human subjects involved in the research, such as threats in health issues to the human subjects, believing that it is essential to ensure the research on gene editing are safe and ethical,

*Fully aware* of recently developed gene-related technologies, such as the Clustered Regularly Interspaced Palindromic Repeats/ CRISPR-associated protein 9 (CRISPR/Cas 9) gene modification technology,

*Expressing its appreciation* towards the Global Gene Editing Regulation Tracker, a project open to the public that keeps track of gene related activities in nations around the world,

*Noting with deep concern* the birth of two genetically modified babies in China in 2018, followed by the birth of another in 2019,

*Fully believing* that the international community should actively put-up counteractive measures to potential problems of gene editing practices,

1. Calls for all member states to enact legislation that restricts research on gene editing to ensure it follows the guidelines and principles for ethical research in ways such as, but not limited to:
   1. Legislations mainly targeted on protecting human rights of participants in the research are protected in ways such as, but not limited to:
      1. Contracts signed by participants in the research approved by the government donations from countries,
      2. Participants must be apprised about the research thoroughly, including potential risks before participating the research,
      3. All participants must be voluntarily involved in the research, and they can withdraw from the study without at negative repercussions,
      4. Legislations on gene edited babies to prevent indiscreet mass production that can cause uncountable numbers of side effects which is misaligned to general human ethics,
   2. Legislations primarily on securing biodiversity from the negative effects of gene edited crops in ways such as, but not limited to:
      1. Only allowing certain areas where gene edited crops do not threaten the environment and are under control to grow gene edited crops due to unintended consequences as mutated crops possess greater potential to survive,
      2. Establish procedures for transporting gene edited crops that safety had been guaranteed with detailed precautions,
   3. Asks for the creation of impartial technological committees or advisory boards to offer continuing direction and supervision around gene editing research;
2. Emphasizes the establishment of strong monitoring and enforcement systems to guarantee adherence to the more severe penalties for transgressions on the guidelines for ethical research in the field of gene editing research:
   1. Urges member states to set aside enough money to establish regulatory bodies or authorities in charge of keeping an eye on and supervising gene editing research, making sure that ethical standards on science research are followed, and enforcing penalties for transgressions,
   2. Calls upon member states to strengthen cooperation between institutional review boards, research institutions, and regulatory bodies that are relative to gene editing research to guarantee that sanctions are applied effectively in ways such as, but not limited to:
      1. Conducting frequent audits,
      2. Inspections,
      3. Investigations into reported infractions,
   3. Demands the creation of reporting systems that let people report alleged transgressions in gene editing research without worrying about facing consequences, which will guarantee that allegations are investigated in detail and that legal and ethical steps are taken to address transgressions,
   4. Consequences for those who do not follow the legislations must be set to alarm those who are involved in the research, including such consequences but not limited to:
      1. Forbidding their purchase on high technology machines used in editing gene for a period depending on the severity of transgressions,
      2. Sent to the official court and judged depending on their severity in violation of human right including financial compensation to victims;
3. Urges the World Health Organization (WHO) to impose restrictions on the manufacturing and distribution of machines related to gene editing to better regulate the speed and scope of gene editing research and experiments, in ways such as but not limited to:
   1. Allowing a few companies and research facilities that get approved by national or international offices permission to construct, modify, or purchase gene editing related devices, whilst fully preventing individuals from partaking in such activities by law,
   2. Requiring approved customers to periodically disclose details of their purchases and activities to the WHO,
   3. Utilizing the annual meeting of the World Health Association (WHA) to set specific guidelines regarding gene research,
   4. Staying vigilant on the trade and usage of important gene editing instruments such as, but not limited to:
      1. RNA synthesizers, which are used in the production of RNA segments,
      2. The growth media for Streptococcus pyogenes, a type of bacteria that has been used for collection of the CRISPR gene;
4. Requests member states to establish transparent regulatory frameworks for the oversight of gene editing research within their borders, ensuring that ethical considerations, gene diversity, and safety precautions are prioritized, including:
   1. Encourage member states to periodically inspect scientist's gene-editing research in an ethical manner by gene-editing organizations such as,
      1. Thermo Fisher Scientific,
      2. Merck KGaA,
      3. Gen Script,
      4. Sangamo Therapeutics,
   2. Funding that dispense from member states and parent organizations will be monitored by the Research Quality Association (RQA) so that scientists can guarantee their continuation,
   3. Making sure scientists have specific evidence of their experimental results confirmed by the gene-editing organizations such as, but not limited to:
      1. Sangamo Therapeutics,
      2. Horizon Discovery Group,
      3. Editas Medicine,
      4. Intellia Therapeutics,
   4. Encouraging member states to set up procedures for the regular evaluation and revision of policies and guidelines, taking into consideration fresh data, public feedback, and global advancements by:
      1. Regularly conducting public opinion poll about gene editing,
      2. Revising recently published paper about gene editing,
      3. Tracking gene editing technology through institutions such as the Global Gene Editing Regulation Tracker;
5. Suggests countries that are struggling with food shortage to be the testing ground for newly developed gene edited crops that are immune to water scarcity, less nutritional soil, or diseases, which will promote regulated tests of new gene edited crops through:
   1. Recommending organizations to offer benefits to those countries that participated in testing as payment for taking risk of serious harm in environment and biodiversity such as, but not limited to:
      1. Nations that participated in the testing of new gene-edited crops will have tax deduction,
      2. Companies that participated in the testing of new gene-edited crops will have tax deductions,
      3. Donating tested crops and research data about the crops that grew well without problem,
   2. Sharing knowledges with WHO and UNESCO about gene edited crops including, but not limited to:
      1. Ways to grow new crops,
      2. Characteristics of new crops,
      3. Principal of new crops’ strength,
      4. Possible threats that can be caused by the crops,
   3. Advising the organizations to send research reports about the crops to WHO, UNESCO, and the country’s government to make sure that new gene edited crop is real by each of them:
      1. Not approving those that has done plausible research,
      2. Filtering out those that require several resources compared to its return;
6. Further requests member states to increase public awareness in the ethical implications of gene editing technologies, while also encouraging a worldwide discussion to ensure that varied political stances are reflected in the formulation of recommendations, including:
   1. Collaboration with educational institutions to incorporate gene editing ethics into school curricula, encouraging critical thinking and informed decision-making from an early age, such as:
      1. Middle schools,
      2. High schools,
      3. Universities,
   2. Developing and implementing educational campaigns through various media channels to educate the public about the ethical implications of gene editing technology,
   3. Promoting a better understanding of gene editing technologies and their societal implications, member states are encouraged to establish forums for open discussion between researchers, policymakers, ethicists, patient advocacy groups, and the public.