



## Life-GPT? CBD must investigate the AI Bots building LMO's

By Jim Thomas, Friends of the Earth US.

In December 2022 as human negotiators constructed the text of the Global Biodiversity Framework, a different kind of text-making was prompting concern. ChatGPT - a generative Artificial Intelligence (AI) programme - began generating automated text and images using technology that may eventually upturn economies. The far-reaching implications of 'generative AI' are now reaching the CBD.

Chat GPT is a 'Large Language Model' (LLM). It ingests billions of existing texts and images to create new 'synthetic data': text, 'deepfake' photographs and movies. Similar AI models are also ingesting the world's genetic information (eg DNA) to generate synthetic biology organisms, components and products.

Leading this work are the world largest tech companies: Google and Salesforce are generating new synthetic proteins. Chipmaker NVIDIA has trained an AI bot to invent novel viruses.

Microsoft's AI lead, Mustafa Suleyman, claims "Limits are now being breached. We are approaching an inflection point ... the most profound in history. The coming wave of technology is built primarily on two general-purpose technologies capable of operating at the grandest and most granular levels alike: artificial intelligence and synthetic biology".

The CBD's Multidisciplinary Ad Hoc Technical Expert Group on Synthetic Biology (mAHTEG) identified 'integration of Artificial intelligence with Synthetic Biology' as a priority topic for the CBD, arguing that it "may have significant adverse impacts on the objectives, principles and provisions of the Convention".

The mAHTEG recommends parties agree "a policy formulation process to address in more detail the implications of the integration of artificial intelligence with synthetic biology ", including a report. This must address:

1. BIOSAFETY - AI platforms often create text and images full of errors and "hallucinations". Would AI-designed genetic engineering repeat this problem?
2. BIOPIRACY – Since AI models mass-ingest millions of digital sequences, artists and authors complain chatGPT has stolen their work. Massive unauthorized use of DSI (digital sequence Information) amounts to unprecedented automated biopiracy.
3. SOCIO-ECONOMIC/CULTURAL CONCERNS - Tech corporations are making broad technofix claims without social assessment. AI models are capital and energy hungry and unlikely to be compatible with equitable community development.

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# Urgent need for international biosafety oversight and the right to say no, as gene drive mosquito projects expand in Africa

By Sabrina Masinjila, African Centre for Biodiversity (ACB) research and advocacy officer

Gene drives, a form of synthetic biology, pose significant risks with their potential to alter entire species, including driving them to extinction. Discussions on gene drives under the Convention of Biological Diversity (CBD) have been extremely contentious, as those with vested interests have been blocking international biosafety regulation and oversight.

Projects like Target Malaria and Transmission Zero (T0) are advancing the deployment of gene-drive mosquitoes, primarily targeting malaria-carrying *Anopheles* mosquitoes, in both West and East African countries. However, these initiatives have proceeded in the absence of internationally agreed biosafety standards to govern risk assessment and management during the contained use experimental phase as well as open releases.

This is compounded by scant biosafety institutional and regulatory capacity in Africa, a lack of regulatory experience, and no transparency in terms of information, as required by the Cartagena Protocol on Biosafety and national biosafety regulations.

African civil society in Tanzania, for example, where the T0 project operates, have raised concerns about limited wider public consultation and access to pertinent documents.

While malaria is a huge public health challenge in Africa, investments should focus on systemic solutions that provide adequate healthcare, clean water, and sanitation.

Please see ACB's new blog for more detail: <https://acbio.org.za/gm-biosafety/expansion-of-gene-drive-mosquito-projects-in-africa/>

Gene drive organisms pose unacceptable risks to biodiversity and human health and the draft guidance for risk assessment developed under the CBD to date is not comprehensive enough to address the uncertainties. Further guidance that invokes the precautionary principle and the right to say no is essential. We strongly urge African governments to support further guidance under the CBD that provides thorough methodologies capable of fully addressing the risks.

## SIDE-EVENT

### **Priorities in Synthetic Biology – An overview of latest developments, risks, power dynamics, and ethics**

Tuesday 2024.05.14 at 13:15.

CR-9 - Africa, 2nd floor

Rapid developments in synthetic biology are already having significant socio-economic and ecological impacts on ecosystems and communities around the world. Despite the novelty, robust risk assessments and precautionary guidelines are being undermined, posing ethical threats such as exploitation of genetic resources without the requisite benefit-sharing, testing without consent, and leaving biodiversity considerations unaccounted for. As new uses and applications of synthetic biology continue to roll out, including Artificial Intelligence integrated to synthetic biology, self-limiting insects, gene drive, and self-spreading vaccines, strong international regulation and strict adherence to the precautionary principle is necessary to explicitly ensure biosafety, human health and well-being, and conservation of biodiversity. In this context, experts will come together to provide an overview of the latest developments and critical issues of risk, power, and ethics around synthetic biology, and address key implications for CBD to consider.