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Open Letter on Gene Drive Technology

To the Parties to the Convention on Biological Diversity and the Parties to the Cartagena Protocol on Biosafety:

We call on you to support ongoing and new gene drive research, building on cautious and responsible practices and broad stakeholder dialogue.

The potential for gene drive technology is very significant. It is a novel tool which may enable interventions that are durable, cost-effective, and highly efficacious, complementing existing efforts to improve human health and environmental sustainability.

We urge you to resist current advocacy efforts demanding a ban on gene drive research or on the future use of gene drive-based products. Imposing a moratorium on such promising life-saving and life-improving innovations so early in their development would be unwarranted, damaging and irresponsible. Blanket bans discourage research and prevent regulators, policy-makers and other stakeholders from having an informed conversation about the use of new technologies.

One potential application of gene drive is to reduce the burden of vector-borne diseases such as malaria, dengue and the Zika virus, which account for more than 17% of all infectious diseases, and cause more than 1 million deaths annually. The cost of such disease is tremendous: malaria alone is estimated to cost African countries USD \$12 billion a year.

Other potential applications, such as for the control of invasive alien species for conservation purposes, are also being investigated. The total loss to the world economy as a result of invasive non-native species has been estimated at 5% of global annual production. Invasive species are the leading cause of island extinctions, and the second-leading cause of extinctions on continental mainlands.

Current research on gene drive is at an early stage, and so a definitive decisions about gene drive-based products is premature at best. Based on current progress, products ready for field testing are 5 years out, possibly longer. This gives scientists and stakeholders, particularly those from countries where gene drives might one day be employed, time to consider the important questions of regulation, risk assessment, ethics, and engagement, and to prepare for assessing an actual application.

There are regulatory systems set up to rigorously assess new classes of medicines, new vaccines, new pesticides, and applications of living modified organisms, for risks and benefits on a case-by-case basis. A moratorium on the use of gene drive violates the case by case approach of these systems and risks closing the door on critical new tools.

We need research on gene drives that is careful, incremental, and independently vetted. There are already efforts underway to define frameworks for responsible research and use. Both the US National Academies of Sciences (NAS) and the UK House of Lords have recently published reports noting the great potential of gene drive research while also laying out principles for a safe and constructive path forward. The African Union has also mandated New Partnership for African Development (NEPAD) to seek expert views on emerging technologies, such as gene drive. These open consultative approaches are the best way forward and we urge Parties to the Convention to participate in future dialogues as a way to help build consensus.

We recognize that gene drive applications may work in some areas or for some applications, and not for others. We need the knowledge and understanding acquired through research and development to enable national authorities to engage in detailed case-by-case assessments of each application of gene drive technology.

We hope that you will express support in the upcoming MOP8 and COP13 for further research in this field and not make a foregone conclusion for or against this possible tool before its potential and risks can be appropriately evaluated.

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